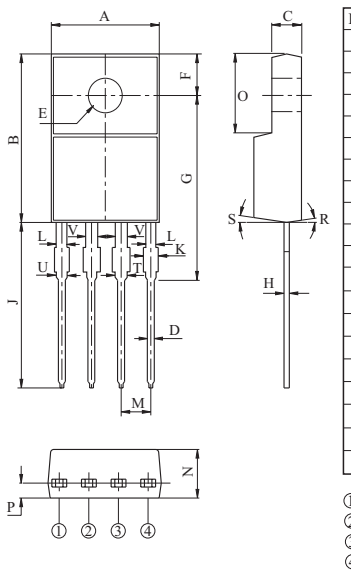
4 TERMINAL LOW DROP VOLTAGE REGULATOR

The KIA78R × × series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.



DIM	MILLIMETERS
A	10.00±0.20
B	15.00±0.20
C	2.70±0.20
D	0.60±0.10
E	Φ3.20±0.20
F	3.50±0.10
G	15.70±0.20
H	0.40±0.10
J	14.3+0.2/-0.1
K	1.45±0.10
L	1.00±0.10
M	2.54
N	4.50±0.20
O	7.5±0.1
P	1.50±0.10
R	5°
S	8°
T	1.30±0.1
U	3-1.00±0.1
V	1.30±0.1

① DC INPUT (V_{IN})
② DC OUTPUT (V_O)
③ GND
④ ON/OFF CONTROL

TO-220IS-4

FEATURES

- 1.0A Output Low Drop Voltage Regulator.
- Built in ON/OFF Control Terminal.
- Built in Over Current Protection, Over Heat Protection Function.

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
* KIA78R25API	2.5	V
* KIA78R30API	3.0	
KIA78R33API	3.3	
* KIA78R35API	3.5	
* KIA78R37API	3.7	

Note) * : Under development

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	15	V	-
ON/OFF Control Voltage	V_C	15	V	-
Output Current	I_O	1	A	-
Power Dissipation 1	P_{d1}	1.5	W	No heatsink
Power Dissipation 2	P_{d2}	15	W	with heatsink
Junction Temperature	T_j	125	℃	-
Operating Temperature	T_{opr}	-20～80	℃	-
Storage Temperature	T_{stg}	-30～125	℃	-
Soldering Temperature (10sec)	T_{sol}	260	℃	-

ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, I_O=0.5A, Ta=25℃, Note1.)

CHARACTERISTIC		SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage	KIA78R25	V_O	-	2.438	2.50	2.562	V
	KIA78R30		-	2.925	3.00	3.075	
	KIA78R33		-	3.220	3.30	3.380	
	KIA78R35		-	3.413	3.50	3.587	
	KIA78R37		-	3.608	3.70	3.792	
Load Regulation		Reg Load	I_O=5mA ~ 1A	-	0.1	2.0	%
Line Regulation		Reg Line	(Note 2)	-	0.5	2.5	%
Temperature Coefficient of Output Voltage		T_CV_O	Tj=0 ~ 125℃	-	±0.02	±0.05	%/℃
Ripple Rejection		R · R	-	45	55	-	dB
Drop Out Voltage		V_D	I_O=1A	-	-	0.5	V
Output ON state for control Voltage		$V_{C(ON)}$	-	2.0	-	-	V
Output ON state for control Current		$I_{C(ON)}$	V_C=2.7V	-	-	20	μA
Output OFF state for control Voltage		$V_{C(OFF)}$	-	-	-	0.8	V
Output OFF state for control Current		$I_{C(OFF)}$	V_C=0.4V	-	-	-0.4	mA
Quiescent Current		I_Q	I_O=0	-	-	10	mA

Note1) V_{IN} of KIA78R25=4.2V
" KIA78R30=4.7V
" KIA78R33=5.0V
" KIA78R35=5.2V
" KIA78R37=5.4V

Note2) V_{IN} of KIA78R25=3.2 ~ 10V
" KIA78R30=3.7 ~ 10V
" KIA78R33=4.0 ~ 10V
" KIA78R35=4.2 ~ 10V
" KIA78R37=4.4 ~ 10V

Note3) At V_{IN}=0.95V_O

BLOCK DIAGRAM

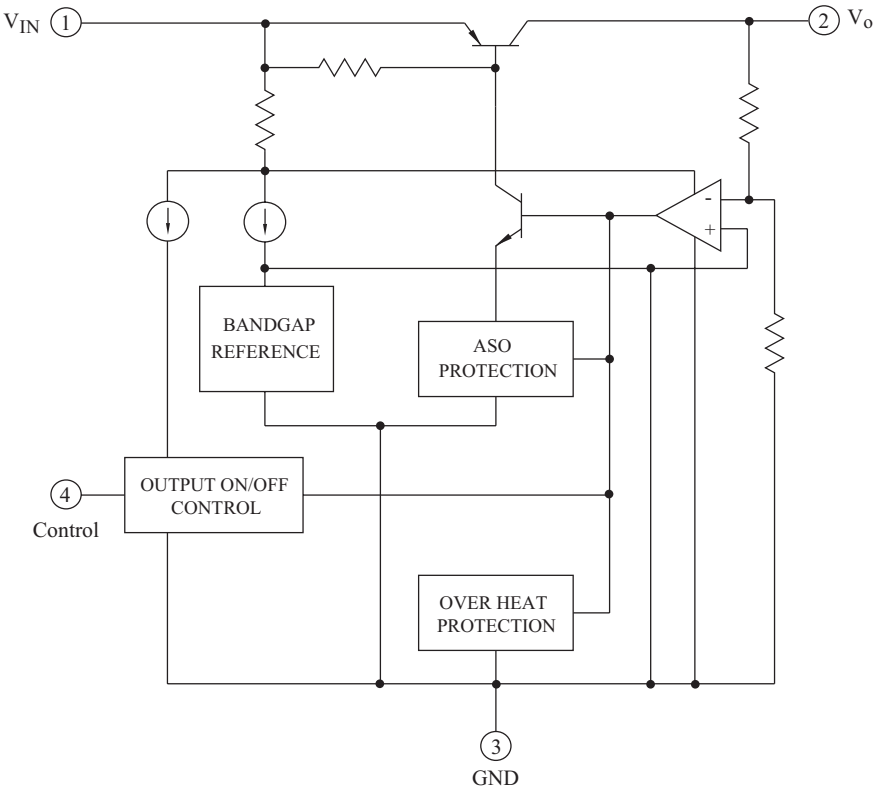


Fig. 1 Standard Test Circuit

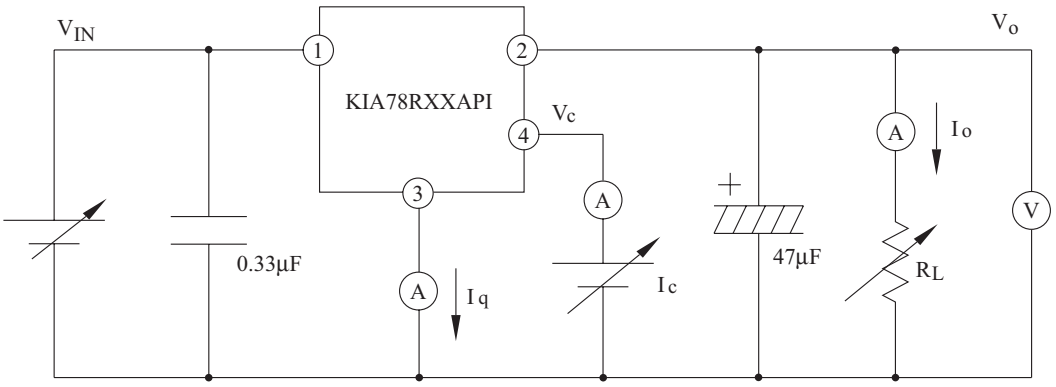


Fig. 1-2 Ripple Rejection Test Circuit

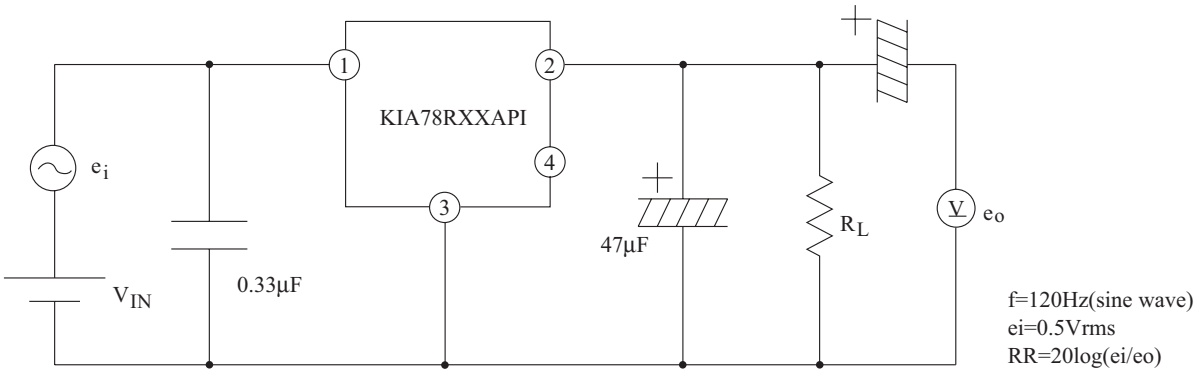


Fig. 2 Application Circuit for Standard

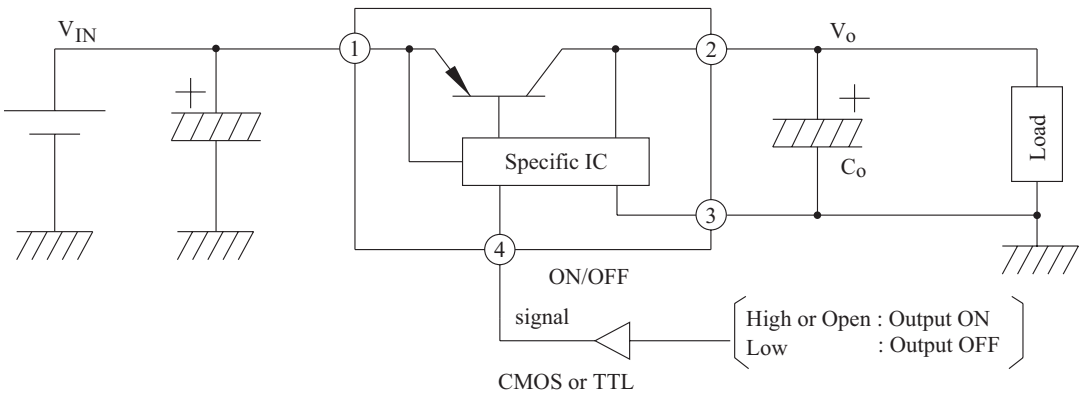
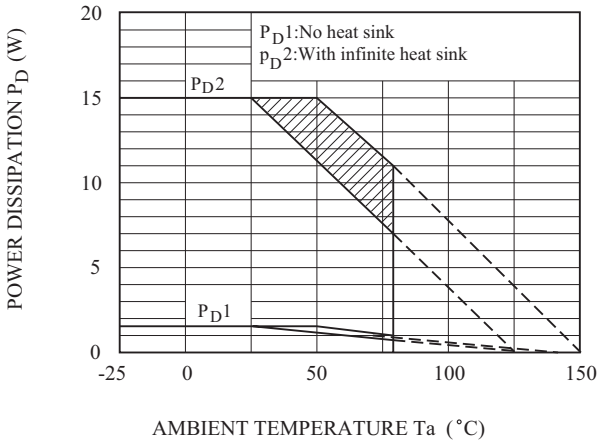


Fig.3 Ta - P_D



Note) Oblique line portion : Overheat protection may operate in this area.

Fig.4 I_O - V_O

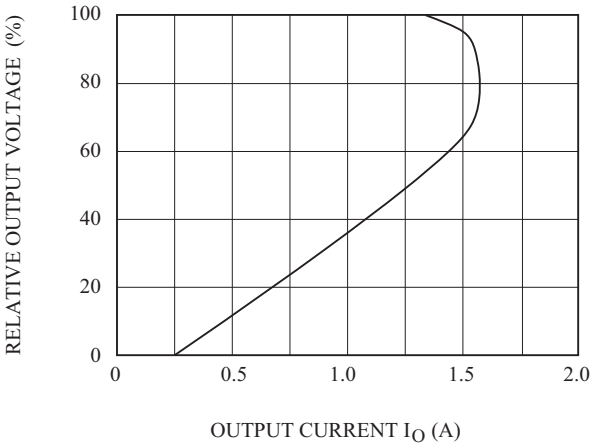


Fig.5-1 T_j - ΔV_O (KIA78R25)

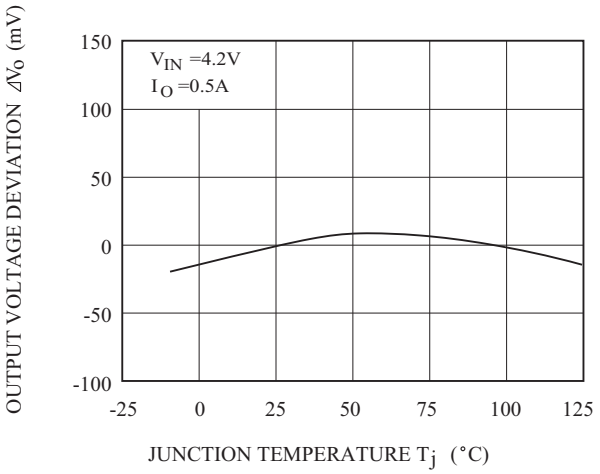


Fig.5-2 T_j - ΔV_o (KIA78R30)

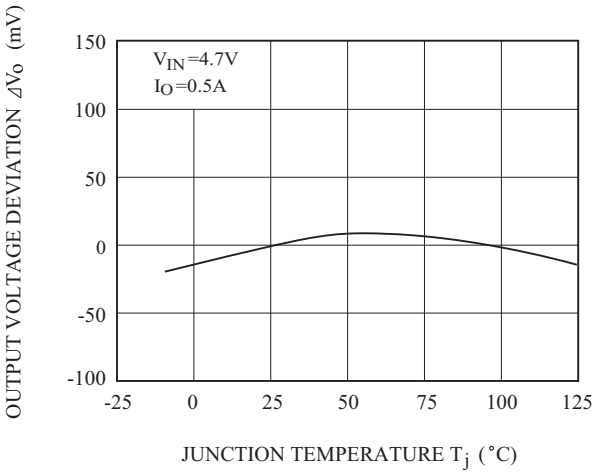


Fig.5-3 T_j - ΔV_o (KIA78R33)

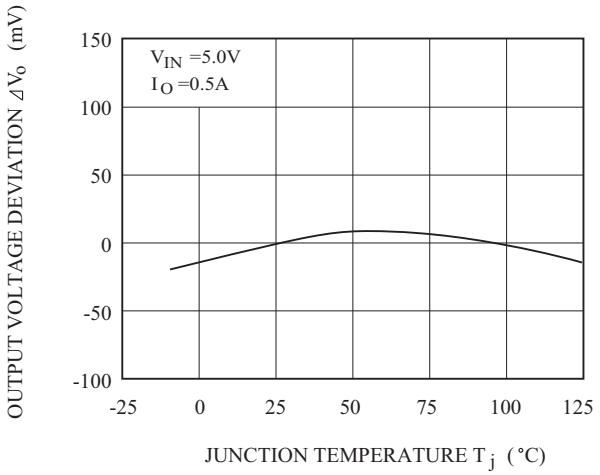


Fig.5-4 T_j - ΔV_o (KIA78R35)

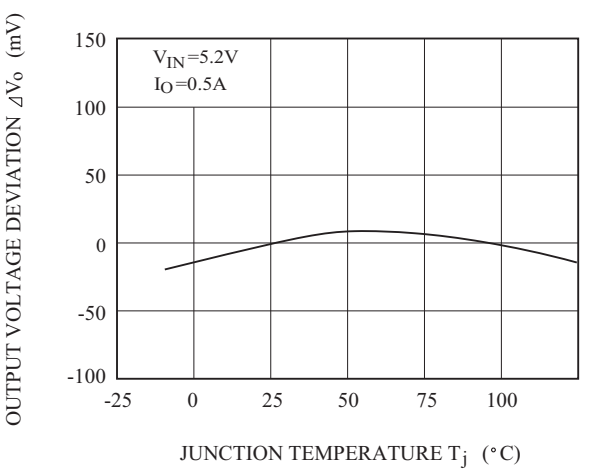


Fig.5-5 T_j - ΔV_o (KIA78R37)

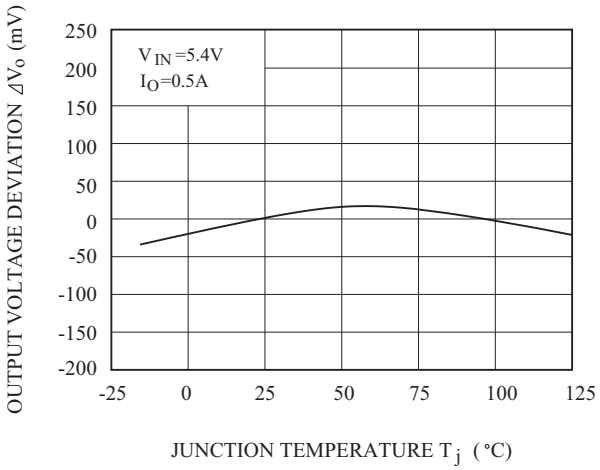


Fig.6 T_j - V_D

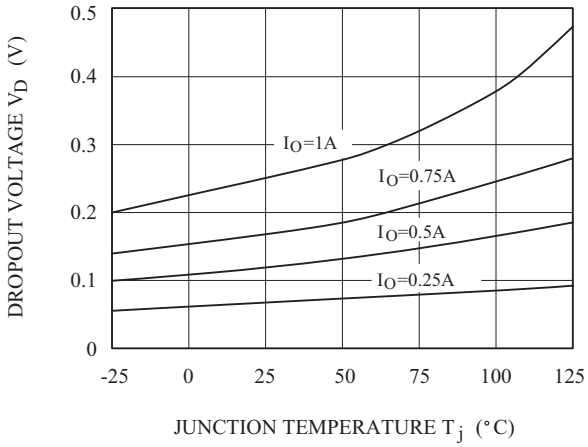


Fig.7 T_j - I_q

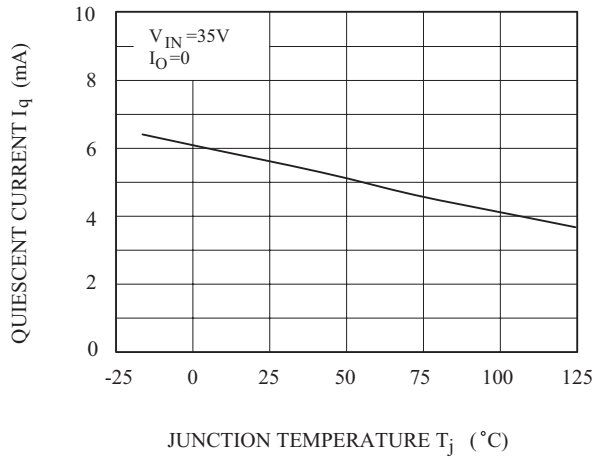


Fig.8-1 f - RR

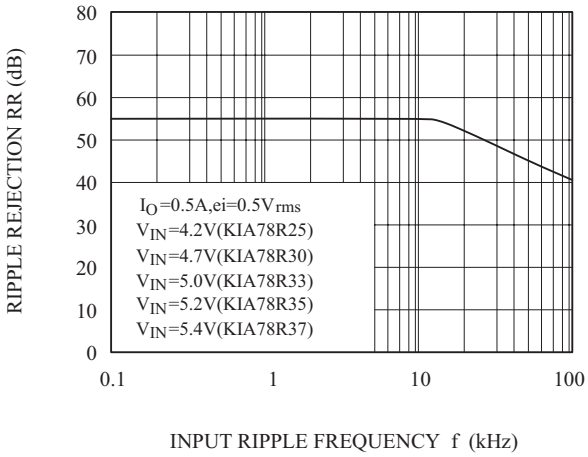


Fig.10-2 I_O - RR